

CLAIMS

We claim:

1. A method for increasing the resolution of an image array, comprising the steps of:

capturing two or more images within the imaging array, each image captured in a successive time interval corresponding to an image capture and storage rate of the imaging array;

correlating pixels of each image to the pixels of the other images; and

combining the correlated pixels of the two or more selected images into a single enhanced image.

2. The method of claim 1, wherein the step of combining the correlated pixels comprises the step of:

creating new pixel values by interpolating values between the corresponding pixels of the combined images.

3. The method of claim 1, wherein the imaging array is comprised of charge-coupled device (CCD) sensors.

4. The method of claim 1, wherein the imaging array is comprised of complementary metal oxide semiconductor (CMOS) sensors.

5. The method of claim 1, wherein the imaging array is comprised of silicon germanium (SiGe) sensors.

6. The method of claim 1, wherein the successive time interval is between 10 milliseconds (ms) and 100 ms.

7. The method of claim 1, wherein the imaging array is a monochrome imaging array.

8. A image enhancing device, comprising:

an IMAGE_OUT signal for receiving two or more successive images
from an imaging array;

a memory for storing the plurality of images;

an ENHANCED_IMAGE_OUT signal for outputting an enhanced
image;

means for correlating a first plurality of pixel sensor values of a first
image of the plurality of images with a second plurality of pixel sensor values of
a second image of the plurality of images; and

means for combining the first plurality of pixel values with the second
plurality of pixel values such that the effective resolution of an enhanced image
produced by the means for combining is greater than the resolution of either the
first image or the second image; and

an ENHANCED_IMAGE_OUT signal for outputting the enhanced
image.

9. The image enhancing device of claim 8, further comprising:

a CONTROL signal for transmitting to the imaging array an instruction
to capture an additional image and to transmit the additional image via the
IMAGE_OUT signal.

10. The image enhancing device of claim 9, further comprising:

means for determining when another image is required from the imaging
array; and

means for generating the CONTROL signal when the determining means
determines that another image is required.

11. The image enhancing device of claim 8, wherein the two or more
successive images are transmitted by the imaging array between 10 milliseconds (ms)
and 100 ms apart.

12. The image enhancing device of claim 8, wherein the two or more images
are captured within the imaging array by charge-coupled device (CCD) sensors.

13. The image enhancing device of claim 8, wherein the two or more images are captured within the imaging array by complementary metal oxide semiconductor (CMOS) sensors.

14. The image enhancing device of claim 8, wherein the two or more images are monochrome images.

15. A digital camera, comprising:

an imaging array; and

a image enhancement device coupled to the imaging array, comprising:

a memory for storing two or more images transmitted from the imaging array;

logic for correlating a first plurality of pixel sensor values of a first image of the two or more of images with a second plurality of pixel sensor values of a second image of the two or more of images; and

logic for combining the first plurality of pixel values with the second plurality of pixel values such that an enhanced image is produced and the effective resolution of the enhanced image is greater than the resolution of either the first image or the second image.

16. The digital camera of claim 15, the image enhancement device further comprising:

a CONTROL signal for transmitting to the imaging array an instruction to capture an additional image and to transmit the additional image to the image enhancement device image via an IMAGE_OUT signal.

17. The digital camera of claim 15, wherein the time between the two or more successive is 10 milliseconds (ms) and 100 ms.

18. The digital camera of claim 15, wherein the two or more images are captured within the imaging array by charge-coupled device (CCD) sensors.

19. The digital camera of claim 15, wherein the two or more images are captured within the imaging array by complementary metal oxide semiconductor (CMOS) sensors.

- 5 20. The digital camera of claim 15, wherein the digital camera is a monochrome camera.

044368.0376 AUSTIN 244353 v2